To: Peter.Van.Noort@CH2M.com[Peter.Van.Noort@CH2M.com]
From: Torres, Michael
Sent: Wed 8/19/2015 12:58:47 AM
Subject: RE: McGaffey and Main: Draft CSR No 10

Here at the Regional Emergency Operations Center. Wish I could go to Durango CO and Farmington NM, though.

From: Peter.Van.Noort@CH2M.com [mailto:Peter.Van.Noort@CH2M.com]
Sent: Tuesday, August 18, 2015 7:56 PM
To: Torres, Michael
Subject: RE: McGaffey and Main: Draft CSR No 10

Are you able to stay local or did you have to deploy to NM/CO area? We're providing staff from our Albuquerque office to help one of the contractors.

From: Torres, Michael [mailto:torres.michael@epa.gov]
Sent: Tuesday, August 18, 2015 7:55 PM
To: Van Noort, Peter/FTW <Peter.Van.Noort@CH2M.com>
Subject: RE: McGaffey and Main: Draft CSR No 10

Hi Peter –

Thanks for your email. Yes sir, please send the CSR to NMED.

Regards,

mt

From: Peter.Van.Noort@CH2M.com [mailto:Peter.Van.Noort@CH2M.com]
Sent: Tuesday, August 18, 2015 7:51 PM
To: Torres, Michael

Cc: Scott.McKinley@CH2M.com; Kimberly.Stokes@CH2M.com
Subject: RE: McGaffey and Main: Draft CSR No 10

Michael, I hope all is well on the Gold Mine project (I was in Denver over the past few days and it was in the news daily.). In the meantime, let us know if ok to forward the CSR to NMED for their review. Thanks, PvN

From: Van Noort, Peter/FTW
Sent: Friday, August 07, 2015 9:14 AM
To: 'Torres, Michael' <torres.michael@epa.gov>
Subject: McGaffey and Main: Draft CSR No 10

Good morning Michael! Please find the attached Draft Cleanup Status Report No. 10 for the period of January 1 to June 30, 2015. We've included a single PDF containing all files (including appendices) and three Microsoft Word files for the text portions of the main report and the two appendices.

This cleanup status report summarizes monitoring data for the VIMS and ESVE systems, operated as part of the selected remedy for the McGaffey and Main Groundwater Plume Superfund Site. Provided below is a summary of key activities performed and findings. Additional information on these activities and findings may be found in the attached documents.

The following activities were carried out during this period:

•□□□□□□□ Weekly on-site inspections of the treatment facility by local O&M subcontractor

•□□□□□□□ Bi-monthly sampling of 'GAC vapor' that includes the combined VIMS/SVE stream before the lead granular activated carbon (GAC) treatment vessel (influent), after the lead GAC treatment vessel (midpoint effluent), and after the lag GAC treatment vessel (final effluent)

•□□□□□□□ Bi-monthly sampling of the VIMS and SVE influent vapor concurrently with GAC vapor sampling (except where noted in the document)

•□□□□□□□ VIMS/SVE sampling – April 2015

•□□□□□□□ VIMS Shutdown sampling – May, June, and July 2015

A summary of the findings from CSR No. 10 are presented here:

•□□□□□□□ The SVE system operated continuously during the January through June 2015 reporting period and the VIMS between January 1 and April 7, 2015, except for downtime events as described above. The flow rates for both systems remained relatively constant, at 1,166 scfm for the VIMS (from January to April) and 169 scfm for the SVE system (from January to June).

•□□□□□□□ PCE concentrations in the sub-slab soil gas extracted by the VIMS continue to decrease over the long term. The PCE concentration in the combined VIMS influent to the central treatment facility decreased from 72,400 $\mu g/m^3$, immediately after VIMS startup in November 2012, to 5.59 J $\mu g/m^3$ in April 2015. Over the current reporting period, the PCE concentration declined from 10.3 $\mu g/m^3$ to 5.59 J $\mu g/m^3$ (Table 2). The general rate of decrease slowed substantially over time and appeared to be primarily influenced by seasonal variability at the time of shutdown.

•□□□□□□□ PCE concentrations in the SVE system influent samples increased from 466 $\mu g/m^3$ to 531 $\mu g/m^3$ between January and March 2015, declining steadily to 210 $\mu g/m^3$ by June 2015. The PCE concentration of 210 $\mu g/m^3$ present in the June 2015 sample is the lowest concentration observed to date (Table 2). The SVE system influent PCE concentration is now below the soil gas remedial goal of 370 $\mu g/m^3$.

•□□□□□□□ PCE concentrations in the GAC final effluent in the January, March, April, May, and June 2015 samples were below the indoor air RSL of 11 $\mu g/m^3$. A similar trend was observed in the GAC midpoint effluent PCE concentrations, with the exception of the May 2015 sample, which may be related to the moisture present in the piping (Table 2).

•□□□□□□□ A total of 440 pounds of PCE is estimated to have been removed by the combined VIMS and SVE remedies to date (Figures 7 and 8). Monthly PCE mass removal rates for the VIMS were 0.017 pound in January 2015, 0.011 pound in March 2015, and 0.002 pound in April 2015. The VIMS was shut down in May and June 2015. The monthly PCE mass removal for the SVE system increased from roughly 0.2 pound in January 2015 to 0.3 pounds in March and April 2015; it then decreased to 0.2 pound in May 2015 and 0.2 pound in June 2015.

•□□□□□□□ The PCE concentrations in the combined sub-slab vapor were below the soil gas remedial goal of 370 $\mu g/m^3$ specified in the ROD (EPA, 2008) at the time of the April 2015 shutdown for all six VIMS-equipped buildings. The decision for the VIMS shutdown was based upon the premise that the SVE system is now capturing the majority of PCE in soil vapor within the vicinity of the buildings and interrupting the vapor intrusion pathway (Appendix A).

•□□□□□□□ PCE concentrations remained below the RSL during the first 3 months of VIMS shutdown (May, June, and July 2015) (Appendix A). The VIMS Shutdown Contingency Plan, presented as Figure 9, instructs sampling to continue on the prescribed schedule until 12 months of data have been obtained.

•□□□□□□□ Low to non-detect PCE concentrations observed at each of the SVE wells during the April

2015 event, in combination with elevated PCE concentrations at the VMPs, indicate that future PCE mass recovery rates will be influenced by diffusion limitations. When this occurs, it is typically more efficient to transition the SVE system from continuous operation to pulsed operations. However, because the SVE system is removing contaminant mass, while also contributing to mitigation of the subsurface vapor intrusion pathway, a transition to pulsed operations is not recommended until the VIMS rebound study is complete (Appendix B).

• The April 2015 VMP results show that the highest PCE concentrations occur in the vicinity of VMP-5, which is located near the northwestern corner of the 1131/1133 South Main Street building. PCE concentrations of 966 $\mu g/m^3$ were detected at VMP-5s and 45,200 $\mu g/m^3$ at VMP-5d. Based on the levels and persistence of PCE concentrations in this area, and concentrations of PCE observed in groundwater at nearby monitoring well MW-14 (up to 50,900 µg/L), CH2M believes PCE source material occurs in this area. Subsurface soil underlying the parking area between 1125 and 1131/1133 South Main Street was not investigated during the 2002-2005 remedial investigation because this area was not expected to contain source material, based on its distance from historical dry cleaning facilities (Appendix B).

In June 2015, EPA's remedial process optimization team released the *Optimization Review Report, Long-Term Response Action and Design Stages McGaffey and Main Ground Water Plume Superfund Site Roswell, Chaves County, New Mexico EPA Region 6* (EPA, 2015b). In this report, the optimization team provided the following recommendations for the VIMS and SVE systems:

1. Partially shut down the VIMS and implement a rebound test.

2. Shift the SVE from continuous to pulsed operations.

3. Install up to six new SVE wells in the vicinity of Trench 2, northeast of well 3-2, in the alley between Trench 1 and Trench 2, in the vicinity of VMP-6, and potentially south of 1139 South Main Street.

As described in Appendix A, a rebound test is currently underway to determine if the VIMS system can be shut down long-term. To prevent interference with the rebound test, shifting from continuous to pulsed SVE operations is not recommended at this time. Although transition from continuous to pulsed operations represents a logical progression for the SVE remedy, the VIMS rebound test is evaluating whether the SVE system can effectively intercept enough of the vapor intrusion pathway to protect indoor air. Until the rebound test is completed, and this determination made, no modification of SVE operations is planned.

The installation of additional SVE wells at the locations recommended by the optimization team, and potentially beneath existing buildings, may be necessary. As described in the feasibility study (CH2M, 2008) and the ROD (EPA, 2008), it was always envisioned that the SVE remedy would be implemented in a phased manner with the installation of additional extraction wells occurring after performance of the SVE technology at the site was understood through operation of extraction wells installed during the initial phase. However, prior to expanding the SVE extraction well array, CH2M recommends that the source area groundwater remedy be implemented and its effect on deep soil vapor plume persistence determined, and that additional

tuning and balancing of SVE flow rates be performed to determine if the existing SVE extraction wells can be optimized to influence soil vapor plume behavior at the locations identified by the optimization team.

Future O&M Activities:

•□□□□□□□ Ongoing sampling of the central treatment facility and condensate discharge will be performed by the local O&M subcontractor (Atkins Engineering) through February 2016 on a bimonthly schedule (CH2M, 2012b).

•□□□□□□□ VIMS rebound sampling will be performed by the local O&M subcontractor during the 6th (October 2015) and 12th (April 2016) months of VIMS shut down.

•□□□□□□□ Future CSRs will continue to be prepared and submitted semiannually (every 6 months) under the current task order (July 2014 to February 2016). The next CSR (CSR No. 11) will cover the reporting period from July 1, 2015, through December 31, 2015.

•□□□□□□□ PCE concentrations near or below the current indoor air RSL observed in the combined VIMS exhaust samples prior to shutdown suggests that soil gas beneath the buildings is being effectively remediated by the SVE system. Additionally, a rebound test conducted during May, June, and July 2015, indicated that a shutdown of the VIMS system did not result in a significant rebound in indoor air PCE concentrations. Therefore, it is recommended that concentrations continue to be monitored during the ongoing events scheduled. Indoor air samples will be obtained at all six VIMS-equipped buildings 6 (October) and 12 (April) months after VIMS shutdown. Should adverse indoor air impacts be observed at any time, restart of VIMS at one or more building will be initiated as per the VIMS Shutdown Contingency Plan (Figure 9).

•□□□□□□□ Rebound testing for the VIMS-equipped building will continue for up to 12 months. If no adverse indoor air impacts are observed during the VIMS shutdown, an evaluation will be conducted to determine if further tuning and balancing of the SVE system can be performed and/or whether the SVE system can be operated in a pulsed mode.

•□□□□□□□ Activities planned for CSR No. 11 reporting period include the following:

–□□□□□□□ Routine maintenance of the SVE blowers

–□□□□□□□ Bimonthly central treatment facility GAC sampling

–□□□□□□□ 6- and 12-month VIMS shutdown sampling

–□□□□□□□ Evaluation and reporting of VIMS rebound test results in accordance with the decision criteria presented in Figure 9

–□□□□□□□ Semiannual sampling of the SVE extraction wells and VMPs in fall 2015

Please review at your convenience and indicate your approval to distribute to other stakeholders (NMED and City of Roswell). If you have any questions or comments that need to be addressed prior to stakeholder distribution, please feel free to contact me.

Thanks, PvN

Peter van Noort, P.G.

Senior Project Manager

D 1 817 900 8348

M 1 817 946 8389

CH2M